

Abstract of the Disclosure

A valve, system, and method for controlling evaporative emissions of a volatile fuel. The system includes a fuel vapor collection canister, an isolation valve, and a fuel tank. The isolation valve includes a housing defining a chamber, a diaphragm movable with respect to the housing between a first configuration and a second configuration, and a coil spring biasing the diaphragm toward the first configuration. The housing includes an interior partition that defines an aperture and separates the housing into first and second sections, a first port that is in fuel vapor communication with the fuel vapor collection canister, and a second port. In the first configuration, the diaphragm occludes the aperture, divides the chamber into three sub-chambers, and substantially prevents fuel vapor flow between the first and second ports. In the second configuration, the diaphragm divides the chamber into two sub-chambers and permits generally unrestricted fuel vapor flow between the first and second ports. The coil spring includes a first end that engages the housing and a second end that engages the diaphragm. The fuel tank is in fuel vapor communication with the second port of the isolation valve. The fuel tank isolation valve can also include a check valve that equalizes pressure between the first and second ports to relieve excess vacuum in the fuel tank.